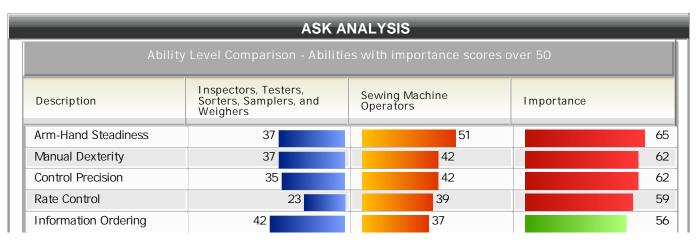
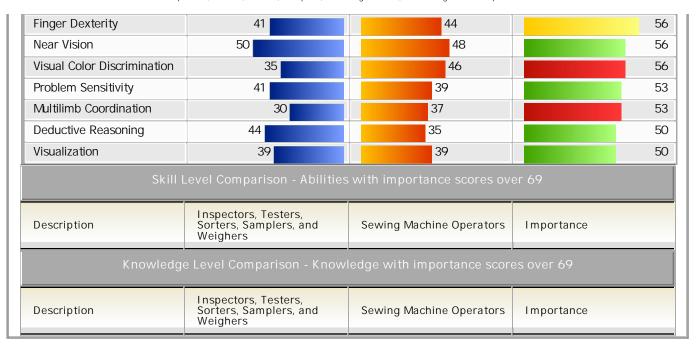
TORQ Analysis of Inspectors, Testers, Sorters, Samplers, and Weighers to Sewing Machine Operators

INPUT SECTION:													
Transfer	Title					O*NET	-	Fil	Filters				
From Title:		Inspectors, Testers, Sorters, Samplers, and Weighers				51-90	61.00	Ab	Abilities: Importance LeveL: 50			Weight: 1	
To Title:	Sewir	Sewing Machine Operators				51-60	31.00	Sk	ills:	Import LeveL:			Weight:
Labor Market Area:	Maine	Maine Statewide						Kn	owledge:	Impor Level:			Weight: 1
	OUTPUT SECTION:												
Grand TORQ:											85		
Ability TORQ				Skills To	ORQ		Knowledge TORQ						
Level			77	Level			8	38	Level				89
Gaps To N	Narrow i	f Possi	ble		Upgrade ⁻	hese Skills			Knowledge to Add			d	
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt		Knowle	dge	Level	Gap	Impt
Rate Control	39	16	59	No Skil	ls Upgrade	Required!			No Knov	vledge l	Jpgrad	es Requ	uired!
Arm-Hand Steadiness	51	14	65										
Visual Color Discrimination	46	11	56										
Control Precision	42	7	62										
Multilimb Coordination	37	7	53										
Manual Dexterity	42	5	62										
Finger Dexterity	44	3	56										
LEVEL and IM					get Sewing mplers, and							nce bet	ween







	<u>-</u>		cation Comparison				
Rela	ted Work Experience Comparis	on	Required Education Level Comparison				
Description 10+ years	Inspectors, Testers, Sorters, Samplers, and Weighers	Sewing Machine Operators	Description	Inspectors, Testers, Sorters, Samplers, and Weighers	Sewing Machine Operators		
8-10 years	0%	0%	Doctoral	0%	0%		
6-8 years	0%	0%	Professional Degree	0%	0%		
4-6 years	12%	8%	Post-Masters Cert	0%	0%		
2-4 years	1%	13%	Master's Degree	0%	0%		
1-2 years	14%	9%	Post-Bachelor Cert	0%	0%		
6-12	23%	11%	Bachelors	0%	2%		
months			AA or Equiv	3%	0%		
3-6 months	3%	0%	Some College	5%	8%		
1-3 months 0-1 month	6% 10%	5% 0%	Post-Secondary Certificate	22%	2%		
None	24%	51%	High Scool Diploma or GED	61%	12%		
			No HSD or GED	7%	73%		
Inspectors, T	esters, Sorters, Samplers, and Wei	ghers	Sewing Machine Opera	tors			
		n Educationa	al/Training Requireme	nt:			
Moderate-terr	m on-the-job training		Moderate-term on-the-job training				
0 1-1-7-	True Cours Description No. 1	Job Zone C		N- Drawara''	N = = -l = -l		
2 - Job Zone Two: Some Preparation Needed Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.			1 - Job Zone One: Little or No Preparation Needed No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.				
These occupa and may requ	tions usually require a high school lire some vocational training or job- In some cases, an associate's or ba	-related	These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.				



Employees in these occupations need anywhere from a few months to one year of working with experienced employees. Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Tasks

Inspectors, Testers, Sorters, Samplers, and Weighers

Core Tasks

Generalized Work Activities:

- Documenting/Recording Information -Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Getting Information Observing, receiving, and otherwise obtaining information from all relevant sources.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Specific Tasks

Occupation Specific Tasks:

- Adjust, clean, or repair products or processing equipment to correct defects found during inspections.
- Administer tests to engineers and operators to assess whether they are qualified to use equipment.
- Analyze and interpret blueprints, data, manuals, and other materials to determine specifications, inspection and testing procedures, adjustment and certification methods, formulas, and measuring instruments required.
- Analyze test data and make computations as necessary to determine test results.
- Check arriving materials to ensure that they match purchase orders and submit discrepancy reports when problems are found.
- Clean, maintain, repair, and calibrate measuring instruments and test equipment such as dial indicators, fixed gauges, and height gauges.
- Collect or select samples for testing or for use as models.
- Compare colors, shapes, textures, or grades of products or materials with color charts, templates, or samples to verify

Sewing Machine Operators

Core Tasks

Generalized Work Activities:

- Getting Information Observing, receiving, and otherwise obtaining information from all relevant sources.
- Controlling Machines and Processes -Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Handling and Moving Objects Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Specific Tasks

Occupation Specific Tasks:

- Attach buttons, hooks, zippers, fasteners, or other accessories to fabric, using feeding hoppers or clamp holders.
- Attach tape, trim, appliques, or elastic to specified garments or garment parts, according to item specifications.
- Baste edges of material to align and temporarily secure parts for final assembly.
- Cut excess material or thread from finished products.
- Cut materials according to specifications, using blades, scissors, or electric knives.
- Draw markings or pin appliques on fabric to obtain variations in design.
- Examine and measure finished articles to verify conformance to standards, using rulers.
- Fold or stretch edges or lengths of items while sewing, in order to facilitate forming specified sections.
- Guide garments or garment parts under machine needles and presser feet to sew parts together.
- Inspect garments, and examine repair tags and markings on garments to locate defects or damage, and mark errors as



conformance to standards.

- Compute defect percentages or averages, using formulas and calculators, and prepare reports of inspection or test findings.
- Compute usable amounts of items in shipments and determine prices, based on quantities and grade assessments.
- Disassemble defective parts and components, such as inaccurate or worn gauges and measuring instruments, using hand tools.
- Discard or reject products, materials, and equipment not meeting specifications.
- Discuss inspection results with those responsible for products, and recommend necessary corrective actions.
- Fabricate, install, position, or connect components, parts, finished products, or instruments for testing or operational purposes.
- Grade, classify, and sort products according to sizes, weights, colors, or other specifications.
- Inspect, test, or measure materials, products, installations, and work for conformance to specifications.
- Interpret legal requirements, provide safety information, and recommend compliance procedures to contractors, craft workers, engineers, and property owners.
- Make minor adjustments to equipment, such as turning setscrews to calibrate instruments to required tolerances.
- Mark items with details such as grade and acceptance or rejection status.
- Measure dimensions of products to verify conformance to specifications, using measuring instruments such as rulers, calipers, gauges, or micrometers.
- Notify supervisors and other personnel of production problems, and assist in identifying and correcting these problems.
- Observe and monitor production operations and equipment to ensure conformance to specifications and make or order necessary process or assembly adjustments.
- Position products, components, or parts for testing, or direct other workers to position them.
- Read dials and meters to verify that equipment is functioning at specified levels.
- Record inspection or test data, such as weights, temperatures, grades, or moisture content, and quantities inspected or graded.
- Remove defects, such as chips and burrs, and lap corroded or pitted surfaces.
- Set controls, start and monitor machines that automatically measure, sort, or inspect products.

necessary.

- Match cloth pieces in correct sequences prior to sewing them, and verify that dye lots and patterns match.
- Monitor machine operation to detect problems such as defective stitching, breaks in thread, or machine malfunctions.
- Mount attachments, such as needles, cutting blades, or pattern plates, and adjust machine guides according to specifications.
- Perform equipment maintenance tasks such as replacing needles, sanding rough areas of needles, or cleaning and oiling sewing machines.
- Perform specialized or automatic sewing machine functions, such as buttonhole making or tacking.
- Place spools of thread, cord, or other materials on spindles, insert bobbins, and thread ends through machine guides and components.
- Position and mark patterns on materials to prepare for sewing.
- Position items under needles, using marks on machines, clamps, templates, or cloth as guides.
- Position material or articles in clamps, templates, or hoop frames prior to automatic operation of machines.
- · Record quantities of materials processed.
- Remove holding devices and finished items from machines.
- Repair or alter items by adding replacement parts or missing stitches.
- Select supplies such as fasteners and thread, according to job requirements.
- Start and operate or tend machines, such as single or double needle serging and flat-bed felling machines, to automatically join, reinforce, or decorate material or articles.
- Tape or twist together thread or cord to repair breaks.
- Turn knobs, screws, and dials to adjust settings of machines, according to garment styles and equipment performance.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- clean equipment or machinery
- cut or trim fabric or leather
- examine products or work to verify conformance to specifications
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery



- Stack and arrange tested products for further processing, shipping, or packaging and transport products to other work stations as necessary.
- Supervise testing or drilling activities.
- Weigh materials, products, containers, or samples to verify packaging weights and ingredient quantities, or to determine sorting.
- Write test and inspection reports describing results, recommendations, and needed repairs.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- attach or mark identification onto products or containers
- · collect samples for testing
- communicate technical information
- compare findings with specifications to ensure conformance to standards
- compute product or materials test results
- conduct performance testing
- · confer with vendors
- determine specifications
- determine specifications or testing procedures
- direct and coordinate activities of workers or staff
- · distinguish colors
- · evaluate material specifications
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- follow manufacturing methods or techniques
- follow statistical process control procedures
- grade, classify, or sort products according to specifications
- inspect manufactured products or materials
- install/connect electrical equipment to power circuit
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- maintain inspection tools or equipment
- maintain records, reports, or files
- maintain safe work environment
- mark items for acceptance or rejection, according to conformance to specifications
- measure, weigh, or count products or materials
- modify electrical or electronic equipment

- maintain consistent production quality
- maintain production or work records
- monitor production machinery/equipment operation to detect problems
- operate sewing machine
- perform safety inspections in manufacturing or industrial setting
- read work order, instructions, formulas, or processing charts
- repair tears or defects in fabrics, garments, or leather products
- sew by hand
- use hand or power tools
- use portable electric fabric cutter

Technology - Examples



or products

- monitor production machinery/equipment operation to detect problems
- monitor repairs or maintenance to enforce standards
- move materials or goods between work areas
- operate industrial or nondestructive testing equipment
- operate packaging or banding machine or equipment
- operate pneumatic test equipment
- operate precision test equipment
- package goods for shipment or storage
- perform safety inspections in industrial, manufacturing or repair setting
- prepare reports
- prepare safety reports
- prepare technical reports or related documentation
- read blueprints
- read production layouts
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recognize characteristics of alloys
- · recognize characteristics of metals
- recognize characteristics of pulps
- recognize wood species characteristics
- record test results, test procedures, or inspection data
- sort manufacturing materials or products
- test manufactured products or materials
- understand engineering data or reports
- understand measuring devices
- understand technical operating, service or repair manuals
- use computers to enter, access or retrieve data
- use electrical or electronic test devices or equipment
- use hand or power tools
- use hazardous materials information
- use interpersonal communication techniques
- use knowledge of investigation techniques
- use knowledge of metric system
- use long or short term production planning techniques
- use oral or written communication techniques
- use precision measuring tools or equipment
- use quality assurance techniques
- use research methodology procedures



within manufacturing or commerce

- use spreadsheet software
- use technical information in manufacturing or industrial activities
- use x-ray or magnetic inspection techniques

Technology - Examples

Analytical or scientific software

- Data analysis software
- Design of experiments DOE software
- Minitab software
- Tolerance analysis software

Computer aided manufacturing CAM software

• Computer-aided inspection software

Industrial control software

- Coordinate measuring machine software
- CyberMetrics GAGETrak Calibration Management Software
- Statistical process control SPC data collection devices
- Wilcox Associates PC-DMIS Inspection Planner

Label making software

• Inspection marking systems

Optical character reader OCR or scanning software

• Label inspection systems

Spreadsheet software

Microsoft Excel

Word processing software

• Microsoft Word

Tools - Examples

- Accelerometers
- Ammeters
- Industrial bench scales
- Beta gauges
- Measuring microscopes
- Digital resistance meters
- Calipers
- · Continuity testers



- Optical comparators
- Compression testersConductivity meters
- Coordinate measuring machines CMM
- Creep and stress relaxation testers
- Depth gauges
- Ductility testers
- Eddy current flaw detectors
- Frequency meters
- Fatigue testers
- Force transducers
- Forklifts
- Frequency counters
- Functional gauges
- Hardness testers
- Height gauges
- Hipot testers
- Hydraulic pumps
- Impact hammers
- Impact toughness testers
- Return loss calibrator RLC passive component testers
- Backplane testers
- Holographic interferometers
- Laser shearography flaw detectors
- Bubble leak testers
- Pulse generators
- Hydraulic lifts
- Penetrant flaw detectors
- Magnetic particle flaw detectors
- Metallurgical microscopes
- Micrometers
- Moisture meters



Inspectors, Testers, Sorters, Samplers, and
Digital multimeters
Bit error rate BER testers
Sampling oscilloscopes
Personal computers
• Plotters
Direct current DC power testers
Gloss meters
• Environmental chambers
Digital thermometers
• Pi tapes
• Shear testers
• Shock testers
Linear or mixed signal equipment
Function generators
Sorting machines
Color spectrometers
• Strain gauges
Tensile testers
• Laser thickness gauges
Thread gauges
Overhead cranes
Utrasonic flaw detectors

• Vibration and shaker systems

• Digital voltmeters DVM

• Radiographic flaw detectors

• Viscometers

Labor Market Comparison									
Description	Inspectors, Testers, Sorters, Samplers, and Weighers Sewing Machine Operators		Difference						
Median Wage	\$ 29,700	\$ 22,440	\$(7,260)						
10th Percentile Wage	\$ 19,620	\$ 16,350	\$(3,270)						



25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 40,300	\$ 27,200	\$(13,100)
90th Percentile Wage	\$ 48,960	\$ 31,710	\$(17,250)
Mean Wage	\$ 31,870	\$ 23,030	\$(8,840)
Total Employment - 2007	1,700	1,080	-620
Employment Base - 2006	1,720	1,077	-643
Projected Employment - 2016	1,473	990	-483
Projected Job Growth - 2006-2016	-14.4 %	-8.1 %	6.3 %
Projected Annual Openings - 2006-2016	26	10	-16

National Job Posting Trends Trend for Inspectors, Testers, Sorters, Samplers, and Weighers Trend for Sewing Machine Operators



Data from Indeed

Recommended Programs No program data for the occupation.





51-9061.00	Inspectors, Testers, Sorters, Samplers, and Weighers	100	2	1,700	\$29,700.00	\$0.00	-14%	26
51-4121.07	Solderers and Brazers	87	2	1,610	\$38,030.00	\$8,330.00	7%	49
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	85	2	910	\$38, 230.00	\$8,530.00	-26%	23
43-5053.00	Postal Service Mail Sorters, Processors, and Processing Machine Operators	84	2	970	\$41,950.00	\$12,250.00	-12%	10
51-2021.00	Coil Winders, Tapers, and Finishers	82	2	90	\$31,910.00	\$2,210.00	-53%	1
19-4011.02	Food Science Technicians	82	3	20	\$32,000.00	\$2,300.00	-3%	1
43-9031.00	Desktop Publishers	82	3	130	\$32, 200.00	\$2,500.00	14%	5
51-9032.00	Cutting and Slicing Machine Setters, Operators, and Tenders	80	2	710	\$31,350.00	\$1,650.00	-23%	12
51-5023.00	Printing Machine Operators	79	2	790	\$29,710.00	\$10.00	-3%	18
43-5061.00	Production, Planning, and Expediting Clerks	79	2	1,320	\$38,490.00	\$8,790.00	-1%	35
51-5021.00	Job Printers	79	3	140	\$31,890.00	\$2,190.00	-10%	2
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	79	2	300	\$32,980.00	\$3, 280.00	-18%	9
19-4031.00	Chemical Technicians	78	3	160	\$34,890.00	\$5,190.00	-7%	6
51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$3,330.00	-22%	2
43-5041.00	Meter Readers, Utilities	78	1	90	\$31,240.00	\$1,540.00	-11%	3

	Top Industries for S	ewing Ma	chine Operators	S	
Industry	NAICS	% in Industry	Employment	Projected Employment	% Change



Cut and sew apparel manufacturing	315200	37.46%	87,218	36,829	-57.77%
Other textile product mills	314900	8.50%	19,797	17,782	-10.18%
Textile furnishings mills	314100	7.91%	18,422	16,690	-9.40%
Self-employed workers, primary job	000601	7.29%	16,967	18,076	6.54%
Household and institutional furniture manufacturing	337120	6.35%	14,794	12,383	-16.30%
Apparel accessories and other apparel manufacturing	315900	2.75%	6, 400	4,026	-37.09%
Apparel knitting mills	315100	2.14%	4,987	2,805	-43.75%
Medical equipment and supplies manufacturing	339100	2.01%	4,674	4,781	2.29%
Other furniture related product manufacturing	337900	1.88%	4, 384	4,577	4.40%
Printing and related support activities	323100	1.73%	4,029	3,192	-20.77%
Motor vehicle parts manufacturing	336300	1.48%	3,443	2,741	-20.39%
Fabric mills	313200	1.36%	3,162	2,233	-29.38%
Drycleaning and laundry services	812300	1.35%	3,133	3,133	0.01%
Clothing stores	448100	1.31%	3,053	2,973	-2.63%
Footwear manufacturing	316200	0.92%	2,134	1,000	-53.16%

Top Industries for Inspectors, Testers, Sorters, Samplers, and Weighers											
Industry	NAICS	% in Industry	Employment	Projected Employment	% Change						
Employment services	561300	7.50%	36, 864	43, 994	19.34%						
Motor vehicle parts manufacturing	336300	4.66%	22,903	17,193	-24.93%						
Plastics product manufacturing	326100	4.23%	20,797	20, 787	-0.05%						
Semiconductor and other electronic component manufacturing	334400	3.70%	18,159	14,967	-17.58%						
Aerospace product and parts manufacturing	336400	3.32%	16,315	15,667	-3.97%						
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.17%	10,680	9,641	-9.72%						
Medical equipment and supplies manufacturing	339100	1.87%	9,177	8,852	-3.55%						
Pharmaceutical and medicine manufacturing	325400	1.80%	8,824	10, 486	18.84%						
Animal slaughtering and processing	311600	1.79%	8,815	9,486	7.62%						
Other fabricated metal product manufacturing	332900	1.78%	8,731	7, 295	-16.45%						
Rubber product manufacturing	326200	1.70%	8, 331	5, 547	-33.41%						
Testing laboratories	541380	1.48%	7,249	8,416	16.10%						
Self-employed workers, primary job	000601	1.48%	7,279	7,313	0.46%						
Foundries	331500	1.45%	7,125	4,872	-31.63%						

Inspectors, Testers, Sorters, Samplers, and Weighers Sewing Machine Operators

Printing and related support activities	323100	1.40%	6,856	5,122	-25.29%			